African Journal of Development Studies (AJDS)
Published consistently since 2012
ISSN 2634-3630 E-ISSN 2634-3649

Indexed by IBSS, EBSCO, ERIH PLUS, COPERNICUS, ProQuest, SABINET and J-Gate.

Volume 14, Number 4, December 2024
pp 55-75

Contextualising University-Community Engagement as a Solution to Inclement Weather Condition Attacks Affecting Rural Communities and Informal Settlements in KwaZulu-Natal, South Africa

DOI: https://doi.org/10.31920/2634-3649/2024/v14n4a3

Lungile Prudence Zondi[1], Stanley Osezua Ehiane[2,3] and Sibongile JM Nhlapho[1]

[1]College of Humanities, University of KwaZulu-Natal, South Africa. Email: zondil4@ukzn.ac.za_and_sbo70@webmail.co.za

[2,]Department of Politics and Administrative Studies, University of Botswana, Gaborone, Botswana. Email: ehianes@ub.ac.bw

[3,]Department of Development Studies, University of South Africa (UNISA), Pretoria, South Africa. Email: stnaleyehiane@yahoo.com

Abstract

Guided by the community engagement theory, this paper contextualised university-community engagement as a practical solution to inclement weather conditions affecting rural communities and informal settlements in KwaZulu-Natal, South Africa. The scoping literature review employed in the study gives evidence that there is a gap in the existing scholarship where university-community engagement is contextualised as a solution to inclement weather attacks affecting rural community and informal settlements. The critical contribution of the paper is that solutions to inclement weather conditions affecting rural communities and informal settlements can only be solved when universities adopt these vulnerable settlements in order to impart theoretical and practical skills to people so as to achieve outcome-based university community engagement. The outcome-based university community engagement

places people at the centre of finding solutions to achieve sustained outcomes of community engagement and to address *denialist theories/social constructs* impeding climate change interventions. This paper was contributed as a guide that universities can use when working with communities either as they raise awareness or as they respond to the aftermaths of inclement weather conditions. The paper also guides the preparedness of universities and the preparedness of communities, which is often not there when weather-related disasters occur.

Keywords: *Contextualised university-community engagement, Denialist theories/social constructs, Inclement weather conditions, Informal settlements, Outcome-based solutions, Rural communities.*

Introduction

Inclement weather conditions are international recorded as a common identity to both developed and underdeveloped countries. Dube and Phiri (2013) postulate that the reality of climate change is not well-accepted and there is emerging evidence that climate change poses a massive threat to development, especially in poor countries. In 1987, between September 25 and 29, South Africa experienced the first tropical cyclone Domoina. The death toll and material damage were the greatest so far in the South African flood history. In recent years (2019-2023), South Africa again experienced inclement weather conditions that affected rural areas and informal settlements, affecting the KwaZulu-Natal Province. Grab and Nash (2023) are weather analysts who predict tropospheric weather patterns driven by greenhouse emissions and ozone depletion.

This paper problematises that many people cling on denial theories to dismiss climate change as a pressing issue in recent times. When inclement weather conditions emerge, community members find social constructs that justify why inclement weather condition happen. One such popular social construct that people in the Province of KwaZulu-Natal express is that *umvelinqangi udiniwe* (the Almighty is angry because of the sins that people have caused) while others would say, "The earth has a way of cleaning itself'. Such social constructs/ denial theories indicate a denialistic behaviour of people towards climate change patterns. This may also imply that there is no clear awareness and understanding of what triggers inclement weather conditions. This could mean that community members are removing themselves from the problem.

La et al. (2024) opines that climate change denialism, also known as climate denial or "global warming denial," involves the rejection of scientific evidence or an expression of doubt towards such weather patterns. Climate change deniers assert that the climate change crisis is a hoax or a scam. They propagate conspiracy theories, suggesting that the climate change crisis is fabricated or, at the very least, exaggerated by interested groups seeking to control the political and economic power. Climate change deniers go to the extent of thinking that scientists are capable of manipulating scientific and ethical standards guiding the discussion.

Rodovic (2016) confirms that there is evidence that rural communities and informal settlements belong to the "group of climate change victims". Some lack knowledge while others are denialists. When confronted by inclement weather conditions, rural communities and informal settlements are always subjected to limited recovery capacities, implying that they are never prepared to escape or recover from the aftermaths of extreme weather conditions. Hence, there is always a need for external interventions. Satterthwaite et al. (2020) explicate that approximately one billion people currently live in informal settlements, primarily in urban areas of the low and middle-income countries. Informal settlements are defined by poor-quality houses or shacks built outside formal laws and regulations. Satterthwaite et al. (ibid) further expound that urban-climate-change-related risks are caused by rising sea levels and storm surges, heat stress, extreme precipitation, inland and coastal flooding, landslides, draught, increased aridity, water scarcity, and air pollution with widespread negative impacts on people (and their health, livelihoods, and assets) and on local and national economies and ecosystems.

Reflections from the Existing Literature

The United Nations report written by Bertolini (2019) indicates that rural communities and informal settlements continue to be excluded from economic developments celebrated by urban areas. Hence, this has encouraged migration patterns from rural areas to urban spaces. These movements have led to the rise of informal settlements that are seen along highways or very close to industrial areas. People are moving to urban areas or industrial areas because poverty is still affecting rural areas from many points of view. James (2023) observes that informal settlements that form part of the complex network between town and

rural citizens have strongly cemented their presence in the spatial fabric of South Africa's urban and peri-urban landscape. James (ibid) further explains that, since 1994, South African cities have been experiencing an exponential growth of informal settlements, particularly in some specific areas with formal upmarket residential development and its increasing demand for domestic employment/cheap labour force. The *General Household Survey* (2020) report by Statistics South Africa indicates that over 84% of South African households lived in formal dwellings, while 11.4% resided in informal dwellings, and 4.3% in traditional dwellings. James (ibid) further states that informal settlements represent not only some of the failures of government and government policies but also the denial of the universal human rights for shelter, home-making, and access to a livelihood. The limited access to basic services perpetuates the vulnerability of informal areas to the devastating effects of natural and unnatural hazards as well as climate change. The high concentration of people, homes and other buildings, and infrastructure in urban areas increases the exposure and vulnerability to floods, earthquakes, infectious diseases, crimes, fires, and transport and industrial accidents.

Mthiyane, Wissink, and Chiwawa (2022) assert that rural-urban migration is a result of movements in search of opportunities because of the existing rural-urban inequality in wealth and quality of life. Urbanisation can, therefore, be defined as the migration of people from rural areas to urban areas for socio-economic reasons. Urban migration is mainly driven by the economic prosperity in urban centres as people from rural communities relocate to cities in search of employment or to take advantage of the urban market for trading and various economic activities. The World Bank (2021) report, in Mthiyane et al. (2022), depicted that over 80% of the gross domestic product (GDP) of the world is generated in cities. Ringwood (2016) further explains that factories and industries are mostly found in urban areas, hence a pulling factor for urbanisation. Mthiyane et al. (2022) further concur that the increased informal settlement population has been a result of industrialisation and fast-paced urbanisation. This rise in the number of informal settlement inhabitants is putting a significant amount of strain on the social infrastructure. The factors contributing to the growth of these informal settlements, *inter alia*, include a lack of developed land for housing, high costs of land beyond the reach of urban poor, and a significant influx of migrants looking for employment in cities. Consequently, informal settlements lack the necessary minimum services and infrastructure because of their inherent 'illegal' status. Consequently,

basic services including electricity, roads, drainage, water supply, sanitation, and market areas are either non-existent or informally arranged.

Most informal households fall into the lowest income category. Although many of them are second-or third-generation habitants, migrants make up the majority. Thus, the informal structures are not just poorly illegally built structures but are also home to individuals who have complicated social networks, socio-economic stratification, and isolated structures (Mthiyane et al., 2022). Mlambo (2018) asserts that, in the South African context, the Government has not adequately invested in the development of rural areas as many are still characterised by lack of infrastructure, limited access to educational and health services, and limited economic opportunities for one's development. South Africa is rapidly urbanising as more and more people are moving to urban areas mainly because of the perceived better living and working conditions thought to be present there. Mlambo (ibid) explains further that due to the United Nations projects, by 2030, a massive 71.3% of South Africa's population will be living in urban areas.

Johnston et al. (2024), Atkison and Atkinson (2023), and Ofoegba et al. (2017) depict that rural communities in Africa are believed to be particularly vulnerable to climate change. This vulnerability of rural households in Africa is caused not only by exposure to climate change but also by a combination of social, economic, and environmental factors that interact with it. Therefore, inarguably so, climate change poses environmental, social, and economic challenges to South African societies, particularly rural communities, with high dependence on natural resources. As discussed by Williams et al. (2019), historic trends of rapid and unplanned urbanisation, coupled with the impacts of climate change, have significantly increased the vulnerability of rural areas and informal settlements (unplanned urbanisation) to natural hazards. As a result of rural underdevelopment and massive labour migration patterns that have been experienced globally, about 3.9 billion people (just over half of the world) have preferred to reside in urban areas, and this number is likely to have increased by 2050 (Williams et al., ibid). Urban areas will be densely populated and having more informal settlements that will be invading unoccupied land (the land categorised as prone to hazards or the land reserved for urban development and many other investments).

In the anthropology field, it is denoted that when people embark on migration, there are always push-and-pull factors that drive the need to

move or to constantly move. The moving of people was recorded in the times of the nomadic people, and this continues to be the experiences of people during the era of massive industrial revolution and globalisation. Zanabazar et al. (2021) and Kanayo et al. (2020) summarise push-and-pull factors of migration through the pull-and-push factor theory. These scholars agree that there is an observable pattern of international migration that depicts massive growth, and this is an inevitable phenomenon on the African continent and as well a pattern in Europe and North Africa. The summary of push-and-pull factors includes economic, social, and political challenges as driving factors. Zamabazar et al. (2021) opine that pull factors refer to the aspects that attract migrants to a region or country. These pull factors influencing migration include economic factors such as employment opportunities, better shelter, adverse climate change patterns, and higher standards of living. Pull factors may also include socio-political factors such as better healthcare facilities, religious tolerance, and freedom from persecution. As discussed by Urba'nski (2022), cities are perceived to be having more economic opportunities that people of different corners occupy to fend for their survival. The desire for better lives and opportunities has forced millions of people to move away from their countries of origin. This has happened even without following proper channels of migrations. Hence, many immigrants are without valid citizenship or residence-formalising documents.

Williams et al. (2019) assert vulnerabilities such as poverty, unemployment, informality, and environmental risks as well as housing and service delivery backlogs are some of the push factors that have pushed indigent people to terrorise cities with informal settlements. Overpopulation exposes people to risks such as earthquakes and inclement weather conditions. According to Dodman, Archer, and Mayr (2018), informal settlements are particularly vulnerable to climate change due to three underlying factors: i) their physical location, which is often environmentally fragile, ii) the socio-economic characteristics of residents, including high levels of poverty, and iii) the political and institutional marginalisation, resulting in the absence of risk-infrastructure and support to cope with the shocks. Zondi and Magwaza (2023) highlight the need to generate remittances in host countries as one of the factors linked to migration patterns.

James (2022) explains that the February 2022 heavy rains and flash floods in several parts of the Gauteng Province left many properties, business, and vehicles submerged in the floodwaters. In the Ivory Park

informal settlement of Tembisa, Gauteng, the heavy rains claimed one life and left over 180 people homeless. On April 18, 2022, the Government declared a National State of Disaster, following the devastating floods that claimed the lives of over 400 people in KwaZulu-Natal and other parts of the country. Catastrophic floods and heavy rainfall continued to cause devastation to many parts of the country throughout that year. The territorial floods in KwaZulu-Natal, and exponentially heavy rainfall in the Eastern Cape and other provinces, caused landslides, damaged houses, roads, health, and school infrastructure, and displaced thousands of people. Over 300mm of rain, roughly 30% of mean annual rainfall, fell over four days between April 9 and 11, 2022. The communities located in low-lying areas and on riverbanks in and around the eThekwini metro were the worst affected by the territorial rains. Many people, most of whom are urban poor, lost their homes, possessions, and loved ones in the floods and landslides.

Causes and the Impact of Climate Change-related Vulnerabilities

As explained by the World Bank (2021) report, climate change is one of the paradigmatic concerns facing many countries. Radtke and Weller (2023) further assert that Africa is, indeed, highly vulnerable to climate change because of densely populated areas and because of its strong economic dependency on climate change-related activities, products, and low adaptive strategies. Ehrens and Halbmayer (2023) assert that climate change has evolved as a planetary threat, a problem to humankind, that has gathered members of states into an international discussion to find practical solutions and to disseminate global relevant climate-related knowledge. Water, agriculture, and health sectors and the entire ecosystem have felt the brunt.

- Water and sanitation pipes burst and they take long to be fixed because climate change interventions have been historically allocated a lower budget.
- Harsh realities of climate change in Africa have exacerbated poverty and drought. Poor agricultural productions have also threatened food security and exacerbated malnutrition.
- Harsh climate change realities have brutally affected coastal ecosystems. This includes lower economic returns in fisheries and in tourism.
- Climate change has had detrimental effects on the health of populations. Rising global temperatures including heat waves have

> compromised the health of populations. Infectious diseases and respiratory infections have been on the rise, resulting in high mortality rates. These incidences have harshly affected poor women and children in rural and densely populated areas.

In the context of medical anthropology, Africa has recorded a rise of infections agents/vectors such as mosquitoes, ticks, and sand flies because of fluctuating temperatures (Artz & Severice, 2020). Peripheral areas are strongly affected by the outbreak of infectious agents, leading to high mortality rates. Health threats, ecosystem, and agricultural interventions require concerted efforts by Africa's scientists and governments to prioritise robust actions that will secure the continent's adaptation and resilience to climate change.

2023 Climate Change Conference Position

As discussed by Jepsen et al. (2021), the position of international countries including South Africa in the Climate Change Conference (COP, 2028) stressed grave concerns about the negative impact that climate change has on the health of people. The United Nations Framework Convention on Climate Change (NFCCC) (2020) report expressed concerns around increasing temperatures, sea levels, changing precipitation patterns, and extreme weather conditions that are threatening human health, safety, food, water security, and socio-economic development in Africa. Deliberations articulated the importance of addressing climate change and human health. The NFCCC and the Paris Agreement committed members of states to ensure that their countries put proactive measures in place. Scientific research was underscored as an ongoing commitment. The South African position in the conference was to reduce carbon emissions through the Just Energy Transition Implementation Plan (2023-2027), highlighting the move from fossil fuel towards cleaner sources of energy. This included the rapid implementation of the Kunming Montreal Global Biodiversity Framework, the White Paper on Conversation and Sustainable Use of South Africa's Biodiversity, and the Ecosystem-based adaptation.

Theoretical Framework and Methodology

The theory of community engagement briefly posits that community engagement is one of the three core responsibilities of universities

(Mohale, 2023). The theory explains that, in recent years, community engagement has gained a considerable attention (see Naidu, 2019; Preece, 2017; Bender, 2013). Bidandi, Ambe, and Mukong (2021) conceptualise community engagement as the process of working collaboratively with and through groups of people affiliated to the university either by geographical proximity, special interest, or similar situation to address issues affecting the well-being of those people. In this paper, community engagement is viewed as a solution to the climate changes that are faced by rural communities and informal settlements. Community engagement is the engagement processes and practices in which a wide range of people work together to achieve a shared goal guided by a commitment to a common set of values, principles, and criteria (see Bidandi, Ambe, & Mukong, 2021). The interpretation of the theory, in the context of this paper, is that at the centre of university community engagement are people and communities that are adopted by universities in order to be empowered in resolving societal issues in the best sustainable manner. This would improve their health and safety. Scoping literature review was employed as a secondary method of identifying the gap in the existing body of knowledge. There is evidence that community engagement has not been contextualised as a response to inclement weather conditions being the context of this study. Seeing that the theory of community engagement brings universities to communities, this paper is contributed as an expansion of the contribution of community engagement to solve climate change-related challenges. Researchers in the study were never in contact with people. Reflexive data analysis informed the development of the content that the paper contributes. Reflexive data analysis was considered befitting the context of the study because (i) as researchers, we are also part of communities, societies, and villages affected by inclement weather conditions, and (ii) we are academics where students that we are servicing are part of communities affected by inclement weather conditions. These realities come as first-hand experiences. Lastly, we are academics in two respective African universities. It became easy to contextualise the content of the modules that we teach in real-life contexts which also involve the participation of students in what the paper conceptualises as university-community engagement.

Contribution of the Paper

While many solutions have been offered by many scholars towards mitigating inclement weather conditions affecting rural communities and

informal settlements, particularly those that have invaded urban spaces, this paper is contributing the notion of university-community engagement as a befitting intervention that people from rural communities and informal settlement can benefit from. The question would be, why could university-community engagement be a solution or a befitting contribution in the context of inclement weather conditions? The paper asserts that universities are institutions of knowledge production. Some of the students recruited by universities are from rural areas and informal settlements; consequently, the institutions have an obligation to ensure the ecological welfare of those communities. Universities don't thumb suck their interventions, but they are grounded on scientific knowledge which seeks to see change in people and to advance the ecology of communities.

Universities have the responsibility to adopt a community, and while doing so, they must be guided by ethics. Their public good stems from them having scholars that specialise in matters that affect communities. They have resources that could positively benefit destitute communities. Hezelkorn and Ward (2012:3) agree that higher education has a "civic duty to engage with wider society on local, national and global scales". In this context, engagement is often used as an umbrella term for university-based activities that connect with issues, problems, or organisations outside of the campus. Hart (2021) expresses that the purpose of community engagement in higher education is to demonstrate the social responsibility of institutions and their commitment to the common good by making their expertise and infrastructure available for community service programmes. Du Plooy (2017) further states that community engagement should lead to socially responsive practices, the development of effective solutions to practical problems, and the development of theories to advance scholarship. It can also lead to dissemination and advancement of knowledge across generations as well as the creation of environments conducive to the adoption of the principles and agenda for social responsibility, accountability, and social justice. Kofi Annan, the former Secretary-General of the United Nations, is quoted from Bhagwan (2020), expressing how "the university must become a primary tool for Africa's development in the new century". Bloom et al. (2006) assert that universities should scientifically analyse African problems, strengthen domestic institutions, and advocate basic human rights. Saidi and Boti (2023) emphasise that community engagement is guided by the principle that knowledge created and

applied by universities should be socially accountable, responsive, reflexive, transdisciplinary, and problem-oriented.

The value for impactful university-community engagement was realised during the COVID-19 pandemic when universities supported communities to cope and adhere to stringent measures that were put up to mitigate the spread of the virus. The view of this paper is that their interventions during the COVID-19 proved that universities have good intentions. Their intervention proved that community engagement does not necessarily have to be in monetary form, but it is also through coordinated efforts to source out resources from other stakeholders in order to respond to the crises of communities. They protect and rehabilitate communities in times of distress (Louw, 2020). In the context of this paper, universities have many faculties that can be involved in raising awareness around issues of inclement weather conditions, targeting rural areas and informal settlements. The view of this paper is that the university-based fields listed in Table 1 below would promote community-based learning through which community members are taught or made aware of how to detect signs of inclement weather conditions, and how to navigate through difficult times. Communities will be able to build their resilience so that they are able to assist themselves during trying times.

Satterthwaite et al. (2020) explain that, across Africa, climate change resilience in informal settlement requires urgent attention. As explained by IPCC (2012), resilience is the ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event timely and efficiently, including through ensuring preservation, restoration, or improvement of its essential basic structures and functions. Urgent climate change programming steps must be taken to prevent a livelihoods catastrophe in semi-arid regions in sub-Saharan Africa.

Table 1: Outcome-based university-community engagement

University Faculty	Community Engagement
Sociology & Anthropology	The community engagement of these scholars can be executed as follows: Profile rural communities and informal settlements that are mostly likely to be vulnerable to inclement weather conditions. Disseminate accurate data to disaster management stakeholders in order to frame impactful proactive interventions. Conduct focus group sessions to record the experiences and aspirations of people from these types of settlements. Empower communities to understand land policies and human social security interventions. Use community engagement as a conduit of recording views and experiences community members. This is where problems can be identified diagnostically and where people-centred interventions can be framed. Empower communities to make and take informed decisions before, during, and after experiences of inclement weather conditions. Empower communities to effectively circulate reliable information about weather hazards, hazardous experiences, and ethics involved in protecting affected human beings.
2. Historians	The community engagement of these scholars can be executed as follows: People who invade unoccupied land because they don't know why such land remains unoccupied must be educated on why. Historians can empower communities about previous disaster attacks that ended up categorising other land as not to be used by human beings.
Geography & Environmental Science	Empower communities about climate change and their triple effects on people. Empower communities on the policies regulating how unoccupied land is accessed and consequences of invading unauthorised lands. Assist communities to conduct risk analysis and come up with responsive interventions. Educate community members on dangers that come with accessing/invading areas that are designated as high-risk lands. Raise awareness on many types of inclement weather conditions. Empower communities to be able to detect inclement weather conditions early. Empower community members on how to build resilience during trying times. Eco-system restoration and nature-based solutions. Empower communities on how to proactively escape inclement weather conditions. Empower communities to use the technology in order to download Apps that are sending warnings of possible extreme weather conditions.
Psychologists and Social Workers	Psychology and Social Work students and scholars in the field can provide psychosocial support to all the victims of inclement

	weather conditions so that they can cope with grief or aftermaths of any loss. Facilitate discussions of moving community members from risks environments to temporary or permanent shelters.
5. Information Technology	The community engagement of these scholars can be executed as follows: Train or empower communities to use their mobile cell phones to download climate change/weather condition reporting Apps so that community members will know the changing patterns of the climate. Train or empower communities on how to use their mobile devices to report correct and ethical information on the triggers of community disasters and the dangers of sending or sharing false alerts or unverified information about disasters. Train or empower communities about ethical considerations that they should know when capturing climate change effects. Educating communities on how to use their mobile devices can actually build their resilience, they will know the nature of the weather/disaster that is about to happen and explore ways of mitigating such disasters to save lives.
6. Sports Sciences	The community engagement of these scholars can be as follows: Sports have the potential to raise awareness about particular subjects and conditions. University faculties of sport can plan different sport codes through which awareness campaigns about inclement weather conditions/climate change can be communicated to community members both in rural communities and in informal settlements in the most casual and friendly manner. Sports can be used to rehabilitate the victims of inclement weather conditions/climate change so that they could cope thereafter.
7. Urban planning	The community engagement of these scholars can entail that community members are empowered to understand: why some portions are left vacant in urban areas and in towns as well as why they should not be used; the consequences of invading land that is demarcated as disaster zones; and repercussions of invading land without following correct ownership procedures.

The nature of university-community engagement depicted above differs from what other scholars have articulated in their scholarship before. Previous conceptualisation of university-community engagement has only been limited to policy endorsement. Although this is good because it institutionalised the commitment of universities to work or adopt a community, here it is expanded from the existing commitment framework, by illuminating how faculties or programmes that are pillars of the university can execute policy objectives that endorse university-community engagement. This is what we call the contextualisation and practicalisation of university-community engagement through which the work of universities can be monitored and evaluated by the National

Department of Education in South Africa. What thus comes through this depiction of university-community engagement is a tangible engagement of faculties/programmes by which communities that are at risk can be profiled before disasters.

Reliable data are collected by sociologists and anthropologists as specialists in studying people, paying attention to empirical and qualitative record of both spoken and unspoken experiences that expose rural communities and informal settlements to hazardous weather conditions. At the end of the phase, people from these communities can be studied as people without risks, as survivors, and as solution makers. The research conducted by sociologists and anthropologists locates the voices of people in the process of an understanding of what has led them to be exposed to the weather conditions. The involvement of sociologists' research findings can be classified as scientific to influence responsive mitigating policies and responsive programmes. In this regard, policies and interventions are human-centric as they are influenced by a bottom-up approach which depicts what communities list as threats and triggers and further highlight how they escaped or coped during or with the aftermaths of inclement weather conditions. In this phase, the university is engaged in learning about hazardous threats that are to be added to the existing body of literature. Through this engagement, a multi-layered intervention becomes a programme owned by the university and the identified community. Trust is built and the community is placed at the centre in understanding the magnitude of the problem.

When sociologists and anthropologists exit the community, they introduce the next faculty, which is the History faculty, which can empower the community with understanding the history and the timeline of inclement weather conditions so that the community is able to make informed decisions; those that put them in risk or decisions to rescue themselves from the vulnerabilities of inclement weather conditions. History is important because people get informed about past incidents that they can possibly avoid. History also allows people to learn from past incidences. Soon after that, the community can be visited by the Geography and Environment Science faculties. They come either as proactive or reactive interventionists, but their community engagement is based on drawing from their expertise of climate and environmental management. In this phase, communities benefit from scientifically tested information which they receive in a manner that does not overwhelm their literacy levels but in a manner that empowers them to

understand how they could actually participate in the quest to mitigate the triggers of inclement weather conditions. The community thus benefits from understanding the consequences of their behaviour as they are empowered about ecosystem restoration and nature-based solutions. Community members are empowered to understand and interpret inclement weather alerts. After Geography and Environmental Science, psychologists and social workers can come to render rehabilitation through free therapies and counselling so that communities can easily heal from the aftermaths of inclement weather conditions. A healthy state of mind allows one to think broadly and be able to make informed decisions.

Information Technology can come in to educate the community to be able to use their technological devices to spread inclement weather alerts and to communicate with key stakeholders when needing any form of rapid response. The Sport faculty can then come in to rehabilitate the affected community through sports. The power of sports is that it gives people hope to redeem and to start anew. Through sports, communities can be conscientious against invading unauthorised land, and those that got affected by inclement weather conditions can heal. Community donations to aid communities that got affected by inclement weather conditions can be solicited through sports events. Finally, urban planning specialists can engage communities to be relocated to safe places where they will not be victims of inclement weather conditions. This is called a well-coordinated rapid university-community engagement programme that empowers community members to take part in finding solutions to encounter weather-related hazards.

The contribution is that the end celebration or rather *net effect* of this rapid university-community engagement is that communities will be empowered to understand climate/weather and its implications on their lives and their overall health. They will be able sto read and interpret inclement weather alerts; escape inclement weather conditions; assist other community members during and after inclement weather conditions; and support those that would be victimised by inclement weather conditions. This will be a self-reliant community which stakeholders would find easy to work with because it is empowered and not solemnly dependent on external stakeholders. Satterthwaite et al. (2020) avow that inclusive and locally led planning approaches can improve the effectiveness and sustainability of resilience building efforts.

Conclusion

The paper thus concludes that universities can achieve a greater task of mitigating inclement weather conditions by involving their students in community engagement activities so that they will be empowered to engage with communities in a manner that does not cause harm and deception, and they will also get to know how to invest towards a sustained community. The involvement of students will also expedite what we have called a rapid university-community engagement because university students are community members of institutions of higher learning. As they invest their time and theory in saving and rehabilitating communities before or after being victimised by inclement weather conditions, they will be practicalising social responsibility and emblemising the spirit of *Ubuntu* which purports that "I am because of you," *Umuntu ngumuntu ngabantu.* University-community engagement will succeed if they put *Ubuntu* as a foundation of their interventions. As conceptualised by many scholars, the *Ubuntu* philosophy embodies communality, respect, dignity, value, acceptance, sharing, co-responsibility, humaneness, social justice, fairness, personhood, morality, group solidarity, compassion, joy, love, fulfilment, and conciliation. This paper is contributed as a guide that universities can use when working with communities either as they raise awareness or as they respond to the aftermaths of inclement weather conditions. The paper also guides the preparedness of universities and communities which is often not there when weather-related disasters occur.

Acknowledgements

This paper acknowledges the contribution of all authors.

Declaration of interest statement

None. Authors did not report conflicting interests.

References

Artz, M., & Severiche, S. (2020). Climate change and global health: A medical anthropology perspective. *Perspectives in Public Health*, *140*(4). DOI: 10.1177/1757913919897943. Accessed on the 25th of August 2024

Atkinson, C. L., & Atkinson, A. M. (2023). Impacts of climate change on rural communities: Vulnerability and adaptation in the Global South. *Encyclopedia*, *3*,721-729. https://doi.org/10.3390/encyclopedia3020052. Accessed on the 25th of August 2024

Bender, C. G. (2013). Responsive leadership as service for curricular community engagement at South African universities: Narratives from academics. In A. S. Tolken & J. du Plessis (Eds.), *Service-learning across the globe: From local to transnational: Paper series* (pp. 29–36). Stellenbosch University.

Bertolini, P. (2019). *Overview of income and non-income rural poverty in developed countries*. Addis Ababa: United Nations Economic Commission for Africa.

Bhagwan, R. (2020). Towards the institutionalisation of community in higher education in South Africa. *Perspectives in Education*, *38(2)*, 36-55. https:doi.org/10.18820/2519593/pie.v38.i2.03. Accessed December 10, 2023.

Bhagwan, R. (2020). University-community partnerships: Demystifying the process of engagement. *South African Review of Sociology*, *49*(3-4), 32-54. https://doi.org/10.1080/21528586.2019.1570324. Accessed November 17, 2024.

Bidandi, F., Ambe, A. N., & Mukong, H. (2021*). Insights and current debates on community engagement in higher education institutions: Perspectives on the University of the Western Cape*. 1 DOI: 10.1177/21582440211011467 journals.sagepub.com/home/sgo. Accessed December 10, 2023.

Bloom, D., Canning, D., & Chan, K. (2006). *Higher education and economic development in Africa*. Washington, DC: The World Bank.

David, S. G. T., Twyaman, C., Osbahr, H., & Hewitson, B. (2007). Adaptation to climate change and variability: Farmer responses to intra-sessional precipitation trends in South Africa. *Climatic Change*, *83*(3), 301-322.

Dodman, D., Archer, D., & Mayr, M. (2018). *Addressing the most vulnerable first-pro-poor alimate action in informal settlements*. UN Human Settlements Programme (UN-Habitat).

Du Plooy, B. (2017). A metaphorical approach to higher education engagement as a liminal and free space amid complex and paradoxical dual demands. *South African Journal of Higher Education*, *31*(5), 14-30.

Dube, T., & Phiri, K. (2013). Rural livelihoods under stress: The impact of climate change on livelihoods in South Western Zimbabwe. *American International Journal of Contemporary Research*, *3*(5), 11-25.

Dubois, O. (1999). *Assessing local resilience and getting roles right in collaborative forest management: Some current issues and a potential tool, with special reference to sub-Saharan Africa*. Rome: FAO.

Ehrens, J., & Halbmayer, E. (2023). *Climate change epistemologies in Southern Africa social and cultural dimensions*. Routledge. DOI: 10.4324/9781003180814

Fairbanks, D. H. K., & Scholes, R. J. (1999). South African country study on climate change: *Vulnerability and Adaptation Assessment for Plantation Forestry*. Pretoria: National Research Facility.

Grab, S. W., & Nash, D. J. (2023). A new flood chronology for KwaZulu-Natal (1836-2022): The April 2022 Durban floods in historic context. *South African Geographical Journal*, *1*, 1-22. https://doi.org/10.1080/03736245.2023.2193758

Hart, C. (2021). Cross sectoral engaged partnerships: Transformative power of higher education to delivery effective societal impact. Keynote Address on Divisions for Social Impact. Annual Social Impact Symposium 2 September 2021. https://www.sun.acza/Lists/news/DispForm.aspx?ID=8585. Accessed September 13, 2023.

Hezelkorn, E., & Ward, E. (2012). Engaging with the community. *Leadership and Governance in Higher Education*, *2*.

IPCC (2012). *Managing the risks of extreme events and disasters to advance climate change adaptation* [A special report of Working Groups I and II of the Intergovernmental Panel on Climate Change by Field, C. B., Barros, V., Stocker, T. F., Qin, D., Dokken, D. J., Ebi, K. L., Mastrandrea, M. D., Mach, K. J., Plattner,, G.-K., Allen, S. K., Tignor, M., & Midgley, P. M. (Eds.)]. Cambridge University Press.

IPCC: Climate Change (2022). *Mitigation of Climate Change*. Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, Intergovernmental Panel on Climate Change. 2022a; AR6: 2913.

James, N. (2023). The effects of climate change on information settlements. *Town and Regional Planning*, *82*, 1-3.

Jepsen, H., Lundgren, M., Monheim, K., & Hayley, W. (2021). *Negotiating the Paris Agreement: The insider stories*. Cambridge University Press. ISBN 9781108886246.

Johnston, P., Egbebiyi, T. S., Zvobgo, L., Omar, S. A., Cartwright, A., & Hewitson, B. (2024). *Climate change impacts in South Africa: What climate change means for a country and its people*. https://web.csag.uct.ac.za/~cjack/South%20Africa_FINAL_22%20Jan_ONLINE.pdf. Accessed August 25, 2024.

Kanayo, O., Anjofui, P., & Stiegler, N. (2020). Push and pull factors of international migration: Evidence from migrants in South Africa. *Journal of African Union Studies* (JoAUS), *8*(2). DOI: https://doi.org/10.31920/2050-4306/2019/8n2a12. Accessed November 5, 2023.

La, V. P., Nguyen, M. H., & Vuong, Q. H. (2024). Climate change denial theories: Sceptical Arguments, and the role of science communication. *Qeios ID: 9WXW9S·* https://doi.org/10.32388/9WXW9S

Louw, S., Taliep, N., Ismail, G., & Bulbulia, A. (2020). Navigating and reimagining community engagement amidst COVID-19. *Social and Health Sciences*, *18*(2), 48–69. https://unisapressjournals.co.za /index.php/SaHS/article/view/13172

Mlambo, V. H. (2018). An overview of rural-urban migration in South Africa: Its causes and implications. *Archives of Business Research*, *6*(4), 63-70. DOI: 10.14738/abr.64.4407

Mohale, M. A. (2023). Community engagement in higher education: developments after the first institutional audit cycle. *South African Journal of Higher Education*, *37*(1), 113-130. https://dx.doi.org/10.20853/37-1-5675

Mthiyane, D. B., Wissink, H., & Chiwawa, N. (2022). The impact of rural-urban migration in South Africa: A case of KwaDukuza municipality. *Journal of Local Government Research and Innovation*, *3*(0), a56. https://doi.org/10.4102/jolgri.v.3i0.56. Accessed October 29, 2023.

Naidu, L. (2019). *An exploration of community engagement in rural India: A case study of the Bhagat Phool Singh Mahila* Vishwavidyalaya (Women's University) [Doctoral dissertation, Durban University of Technology].

Ofoegba, C., Chirwa, P., Francis, J., & Babalola, F. (2017). *Assessing vulnerability of rural communities to climate change: A review of implications for forest-based livelihoods in South Africa.*

Preece, J. (2017). *University community engagement and lifelong learning: The porous university*. Springer.

Radovic, V. (2016). Mitigating efforts in rural communities after extreme weather events: New insights for stakeholders. *Journal of Innovations and Sustainability*, *2*(3).

Radtke, K., & Weller, D. (2019). The World Risk Index 2019. In *World Risk Report 2019, Focus: Water Supply*. Berlin, Germany: Bündnis Entwicklung Hilft and Ruhr University Bochum—Institute for International Law of Peace and Armed Conflict.

Republic of South Africa (RSA), 1996. *The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996)*. Pretoria: Government Printer.

Ringwood, F. (2016). *Overview of income and non-income rural poverty in developed countries*. Addis Ababa: United Nations Economic Commission for Africa.

Saidi, A., & Boti, Z. (2023). Revisiting community engagement in higher education in South Africa from a Vantage point of the Notion of Third Mission. *South African Journal of Higher Education*, *37*(1), 72-91. https://dx.doi.org/10.20853/37-1-5695

Satterthwaite, D., Archer, D., Colenbrander, S., Dodman, D., Hardoy, J., Mitlin, D., & Patel, S. (2020). Building resilience to climate change in informal settlements. *One Earth*, *2*(2), 143-156.

Turpie, J., & Visser, M. (2013). *The impact of climate change on South Africa's rural areas* [Submission for the 2013/14 Division of Revenue, Financial and Fiscal Commission, Cape Town, pp. 100-162].

Urbański, M. (2022). Comparing push and pull factors affecting migration. *Economies*, *10*(1), 21. Accessed October 8, 2023.

Williams, D., Costa S., Sutherland, M. M., Celliers, C., & Jurgen, S. (2019). Vulnerability of informal settlements in the context of rapid urbanization and climate change. *Environment & Urbanization*, *1*, 1-20. International Institute for Environment and Development (IIED). DOI:10.1177/0956247818819694 www.sagepublications.com

World Bank (2021). *Urbanisation Reviews*. https://www.worldbank.org/en/topic/urbandevelopment/publication/urbanization-reviews. Accessed October 19, 2023.

Zanabazar, A., Kho, S. N., & Jigjiddorj, S. (2021). The push and pull factors affecting migration of Mongolians to the Republic of South Korea. *SHS Web of Conferences*, *90*, 01023. https://doi.org/10.1051/shsconf/20219001023

Zondi, L. P., & Magwaza, M. (2023). Women taking agency through feminized migration patterns and remittances: Socio-economic

experiences of migrant street vendors. Pietermaritzburg, Kwazulu-Natal-South Africa. *Advances in Anthropology*, *13*, 29-40. doi: 10.4236/aa.2023.131003. Accessed June 20, 2023.